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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,745	04/21/2004	Michael L. Whitehead	4011	5487
63151	7590	01/28/2008		
MARK BROWN			EXAMINER	
4700 BELLEVUE SUITE 210			ISSING, GREGORY C	
KANSAS CITY, MO 64112			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/828,745	<b>Applicant(s)</b> WHITEHEAD ET AL.
	<b>Examiner</b> Gregory C. Issing	<b>Art Unit</b> 3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(o).

#### Status

- 1) Responsive to communication(s) filed on 31 October 2007.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 38-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 38-47 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 10/31/07
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

1. The Examiner has considered the voluminous references submitted as part of the Information Disclosure Statements (IDS) to the extent required by M.P.E.P. §609.05(b). Due to the sheer number of references, only a cursory review has been made. If Applicants are aware of pertinent material in the references, Applicants are requested to point the specific pertinence in the response to this Office Action.

The following is an excerpt from M.P.E.P. §609.04(a)III:

Although a concise explanation of the relevance of the information is not required for English language information, applicants are encouraged to provide a concise explanation of why the English-language information is being submitted and how it is understood to be relevant. Concise explanations (especially those which point out the relevant pages and lines) are helpful to the Office, particularly where documents are lengthy and complex and applicant is aware of a section that is highly relevant to patentability or where a large number of documents are submitted and applicant is aware that one or more are highly relevant to patentability.

2. Applicants are reminded of M.P.E.P. § 2004 (presenting "Aids to Compliance With Duty of Disclosure," including "helpful suggestions for avoiding duty of disclosure problems") and the specific suggestion in § 2004 ¶ 13, stating:

It is desirable to avoid the submission of long lists of documents if it can be avoided. Eliminate clearly irrelevant and marginally pertinent cumulative information. If a long list is submitted, highlight those documents ... specifically brought to applicant's attention and/or are known to be of most significance. See *Penn Yan Boats, Inc. v. Sea Lark Boats, Inc.*, 359 F. Supp. 948, 175 USPQ 260 (S.D. Fla. 1972), *aff'd*, 479 F.2d 1338, 178 USPQ 577 (5th Cir. 1973), *cert. denied*, 414 U.S. 874 (1974). But cf. *Molins PLC v. Textron Inc.*, 48 F.3d 1172, 33 USPQ2d 1823 (Fed. Cir. 1995).

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3. It is noted that the IDS was not filed with any statement as required by 37 CFR 1.97(e). The timeliness of the citation of 7 pages of prior art, deemed by the applicant to be "material" to the application claims, after the filing of two RCEs, does not benefit compact prosecution.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 38-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The position solution processor as claimed is insufficiently disclosed in the specification. Applicants are required to show where, in the original specification, the claimed position solution processor having the claimed configuration is specifically disclosed. Specifically, applicants are required to show (1) the computing of a GNSS-defined position solution for the structure using GNSS signals received by the antennas and sampled at the same instant and the relative orientation, and (2) computing the location of the single point on the structure.

6. Claims 39, 40, 42, 44, and 47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The use of a GNSS receiver for providing the orientation information is not disclosed in the original specification and is considered new matter required to be cancelled.

7. An arrangement of a thermocouple attached to a temperature sensor is new matter which is not disclosed in the specification since the specification describes a temperature sensor which is exemplified as a thermocouple.

8. In claims 42 and 47, the use of the position solution processor being “preprogrammed for operating switches . . .” is not sufficiently disclose in the specification.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 38-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. In claim 38, the preamble sets forth the determining of a “position of a single point on a structure”, while the body sets forth “processor configured for computing a GNSS-defined position solution for said structure” and “said position solution processor is adapted for computing the location of the single point on the structure.” Is there a distinction between these points. What is the difference between the position solution processor set forth in lines 9-14 and the position solution processor of lines 15-16? Same problems are present in claim 47.

12. It is not understood what the scope of “a redundant array of multiple GNSS receivers” is. This language appears to be misdescriptive since only two receivers are described, i.e. a master and a slave. If the two of these represent an array where is there redundancy? Same problem is present in claim 47.

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13. In claim 38, how does the “orientation” determined form the orientation device (lines 7-8) relate to the “relative orientation” (lines 13-14)? Additionally, what is “relative orientation” relative to?

14. In claim 40, the language “orientation device having a fixed orientation relative to said structure” is not understood.

15. In claim 42, it is not understood what is meant by the language “to select one or more of said antennas for providing signal input to a respective receiver simultaneously.” Moreover, what is operating “simultaneously? In claim 38, the language “multiple antennas each connected to a respective receiver” is descriptive simply of an antenna connected to each of the master and slave receivers, and thus only describes two antennas. Thus, with respect to claim 42 in which it appears that the applicant is attempting to describe the embodiment of Figure 1, the association of a switch with each respective antenna is misdescriptive and does not make sense since if the antennas are switched it is not understood how the signals are sampled at the same instant and provided to a receiver simultaneously. This problem also exists in claim 47.

16. In claim 44, “said receiver array” lacks a proper antecedent basis. Claim 44 is misdescriptive since the temperature sensor is the thermocouple. Thus, a thermocouple attached to a temperature sensor is misdescriptive and in error.

17. It is noted that the applicants appear to be attempting to combine two embodiments described in the specification, e.g., Figure 1 and [0050] (Figure 3) into a single embodiment. It is also noted that none of the rejections set forth in the previous Office Action have been addressed in the applicants' most recent response. Rather the applicants have simply replaced the

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rejected claims with new claims and a statement that the new claims are not taught, disclosed or suggested by the prior art.

18. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

19. Claims 38, 41, 43 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Zimmerman et al (7,027,918).

20. Zimmerman et al teach the claimed system including a system using multiple antennas to obtain a position solution via RTK in order to determine a position with the highest possible accuracy. Figure 1 shows a general environment including an object 102 having a plurality of antenna elements 104 and 106, though the invention can be extended to any multiple number of antennas (10:33-40). As exemplified in Figure 2, each antenna is connected to a respective PTM 202 and 204 which meets the scope of the multiple receivers (10:48-11:4). Each PTM is connected to a common clock 208 which provides sampling of the satellite signals at the same instant (11:5-16). A master processor 206 meets the scope of the claimed position solution processor. A sensor 212 provides further constraint information to the master processor (11:17-33, 13:43-16:60) wherein the constraint information reduces the requirements of the total number of raw data inputs in the same manner as the use of the compass as disclosed in the applicants' specification [0050].

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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22. Claims 39, 40 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman et al (7,027,918) in view of either one of Van Dusseldorp (5,943,008) or Chang et al (5,777,578).

23. Zimmerman et al teach the subject matter substantially as claimed as set forth above. Zimmerman et al do not show the orientation device comprising a GNSS receiver.

24. Each of Van Dusseldorp and Chang et al teaches that it is well-known in the art of position determination/navigation to utilize GPS antenna/signals to determine orientation information.

25. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Zimmerman et al by utilizing a GNSS receiver to provide orientation information in view of the conventionality of such as shown by either one of Van Dusseldorp or Chang et al since the use of such is well-known and its use would have provided the predictable result of orientation information.

26. Zimmerman et al exemplify their embodiments in earthmoving vehicles but does not specify a marine vessel. However, the intended use in a marine structure would have been within the skill of the artisan since the use of the known system on a particular structure would have resulted in predictable results of determining the position using the same information while experiencing similar conditions.

27. Claims 42, 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman et al in view of Geier et al (previously cited, 5,202,829).

28. Zimmerman et al teach the subject matter substantially as claimed as set forth above. Zimmerman et al do not show switches associated with respective antennas.

29. As best understood, the claimed subject matter would have been obvious in view of Geier for reasons previously presented in the prosecution history (6/5/06) which features were subsequently removed from the claims. Zimmerman et al exemplify their embodiments in earthmoving vehicles but does not specify a marine vessel. However, the intended use in a marine structure would have been within the skill of the artisan since the use of the known system on a particular structure would have resulted in predictable results of determining the position using the same information while experiencing similar conditions.

30. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman et al in view of Welles, II et al (5,864,315).

31. Zimmerman et al teach the subject matter substantially as claimed as set forth above. Zimmerman et al do not show the temperature sensor associated with a receiver.

32. Welles, II et al teach the conventionality of the use of a temperature sensor associated with a GPS receiver in order to compensate for temperature drift and thereby provide increased accuracy.

33. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Zimmerman et al by incorporating a temperature sensor with a GPS receiver so as to compensate for temperature drift and improve the accuracy of the GPS receiver as shown by Welles, II et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (571)-272-6973. The examiner can normally be reached on Monday - Thursday 6:00 AM- 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571)-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory C. Issing  
Primary Examiner  
Art Unit 3662

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Primary Examiner, Art Unit 3662